

MINIMUM ESSENTIAL REQUIREMENTS FOR ELECTRODYNAMIC SHAKER HEAD EXPANDER

1. SCOPE. This specification covers the requirements for one (1) head expander. The head expander will be used to increase the surface mounting area of an electro-dynamic shaker.

2. HEAD EXPANDERS FEATURES

2.1 General Features. The head expander shall mount to an Unholtz-Dickie T-1000IAR-43 shaker with an auxiliary load support and linear bearing system. All hardware shall be provided to secure the head expander to the shaker. The first resonant frequency for the head expander shall be in excess of 500 Hz. The head expander should be usable up to 2000 Hz.

2.2 Basic Requirements.

- a. Size. The head expander shall provide a working surface of 44 x 54 inches.
- b. Material. The head expander shall be fabricated from magnesium.
- c. Height. The overall height of the head expander shall not exceed 20 inches.
- d. Weight. The weight of the head expander shall not exceed 850 pounds.
- e. Armature Attachment.

(1) The head expander shall attach to the Unholtz-Dickie T-1000IAR-43 shaker. When mounted to the shaker, the long side of the head expanders shall be perpendicular to the shaker trunnions. Enclosure (1) shows the armature bolt pattern for this shaker.

(2) Recessed holes shall be provided for the securing hardware. Capscrews shall be supplied for attaching the head expander to the armature. To protect the magnesium, all bolt holes shall be fitted with steel washers pressed into place to support all attachment capscrews.

f. Natural Frequency. The head expander's first natural frequency shall be in excess of 500 Hz. A damping material shall be used to reduce upper frequency resonance. Using a standard "truncated box" design with "Q-damp" bulk damping process.

g. Response Equalization. The response ratio measured at any two points across the entire surface shall be $1 \pm 10\%$ up to 200 Hz, $1 \pm 20\%$ up to 300 Hz, and $1 \pm 50\%$ up to 500 Hz.

h. Flatness and Parallelism. The top and bottom surface flatness and parallelism shall be held to within 0.006 inch or less.

i. Load Support and Linear Bearings. The head expander shall provide a mating surface for the load support and linear bearings for the Unholtz-Dickie T-1000IAR shaker. Enclosure (2), Drawing D25844, provides the load support and linear bearing pattern plus mating surfaces for this shaker. Capscrews shall be provided to connect to these supports. Recessed holes shall be provided for the securing hardware.

j. Attachment Points. Eighty-two stainless steel inserts shall be provided on the top of the head expander for test item mounting. Twenty-four stainless steel inserts shall be provided on the side of the head expander, six on each side. The insert shall provide $\frac{1}{2}$ -13UNC-3B threads. Enclosure (3) provides the insert pattern for the head expanders.

k. Balance. The head expander shall be dynamically balanced.

l. Temperature Range. The head expander's performance shall not be compromised when operating in the temperature range of -40 to 150 °F.

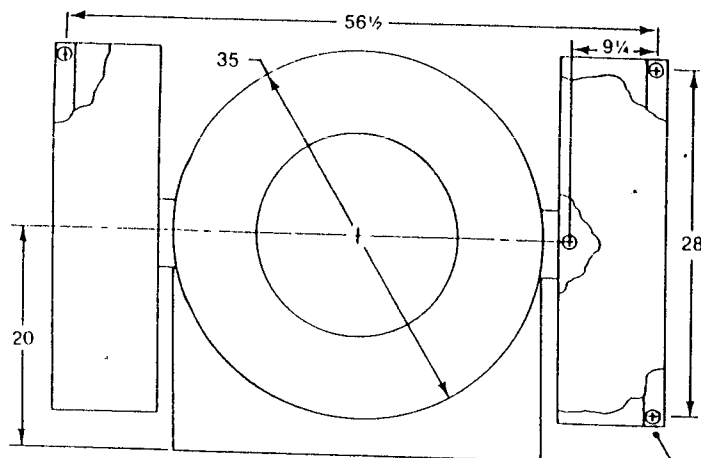
m. Magnesium Welds. All magnesium welds shall have a full lifetime warranty.

3. MANUALS. Two sets of installation and maintenance manuals shall be supplied.

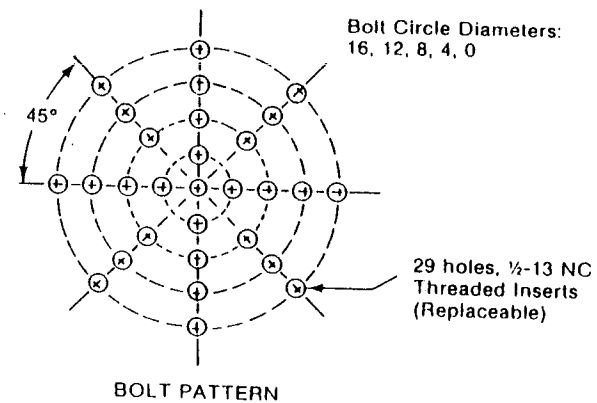
4. DRAWING. Each bidder shall supply a drawing of the proposed head expander to be reviewed prior to selection.

5. QUALITY ASSURANCE PROVISIONS. Final inspection and acceptance will be at the consignees test laboratory by Naval PHST Center, Naval Surface Warfare Center, Indian Head Division Detachment Earle (Code 7123). Operational tests shall be conducted to determine compliance with the requirements contained in this specification.

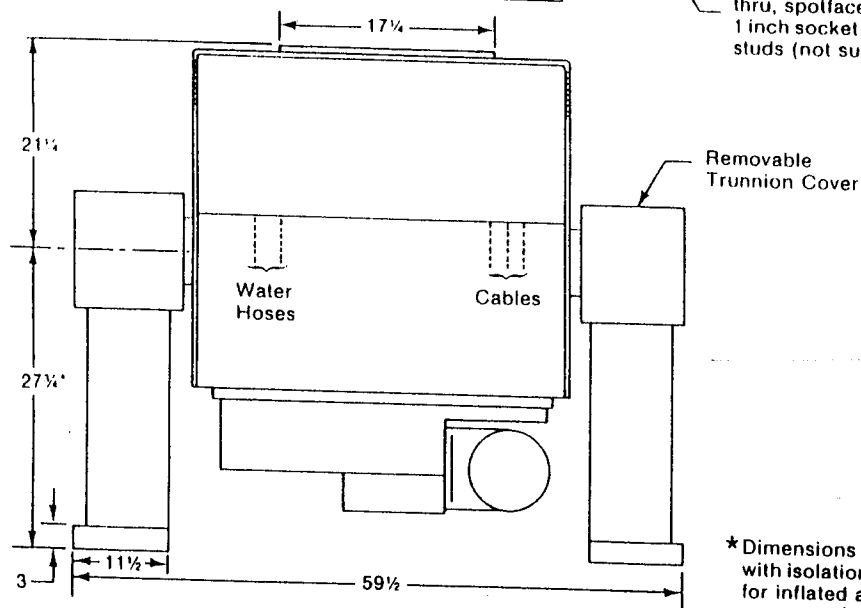
6. WARRANTY. The supplied equipment shall be covered by warranty on materials and workmanship for a period of 1 year from the time of delivery.



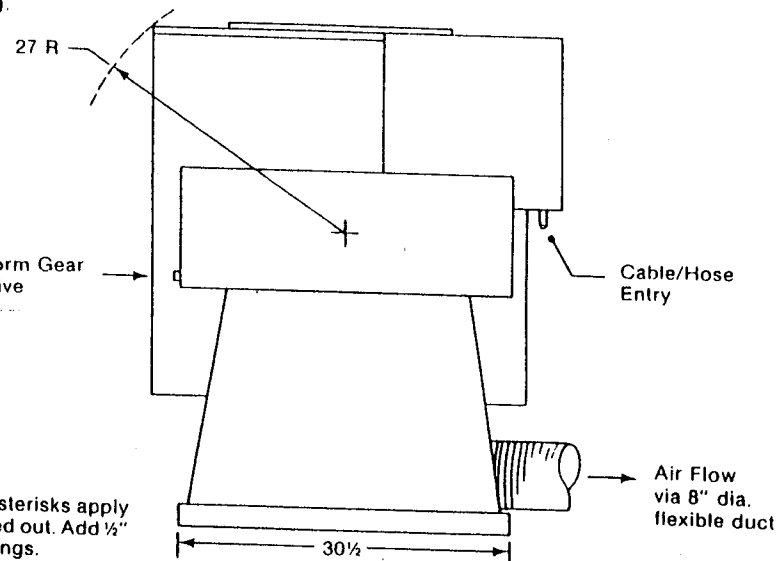
All dimensions in inches



Base mounting holes (6): 1 1/4 thru, spotfaced 1 1/4 inch dia. Use 1 inch socket head cap screws or studs (not supplied).



*Dimensions with asterisks apply with isolation locked out. Add 1/2" for inflated air springs.



UNHOLTZ-DICKIE CORPORATION

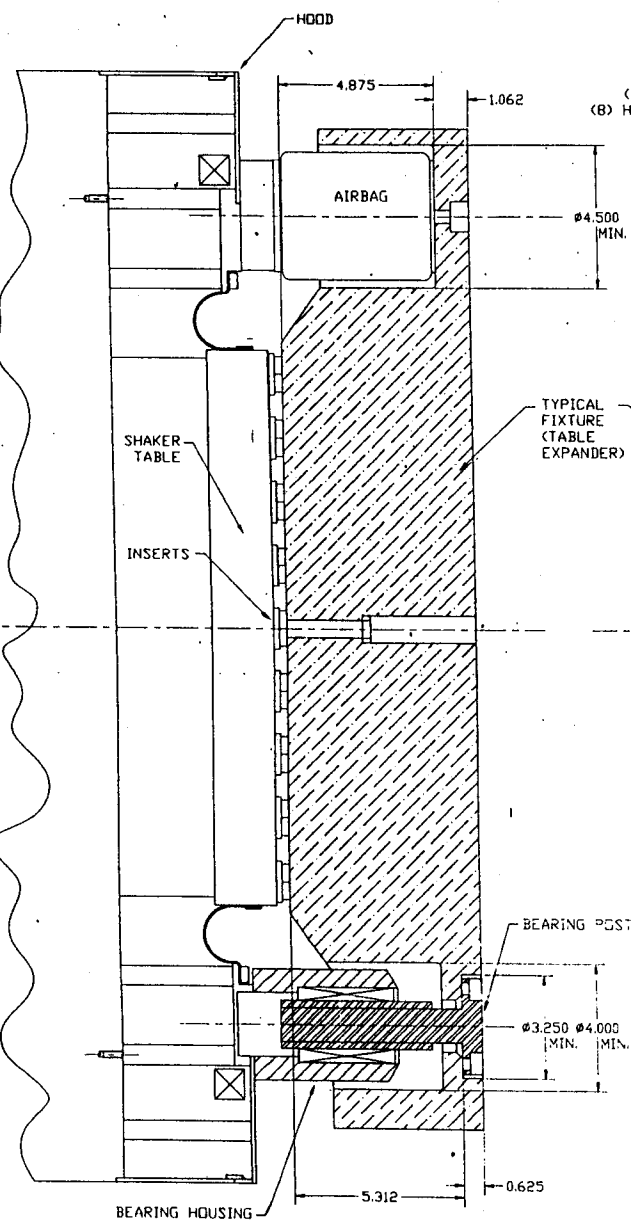
6 Brookside Drive • Wallingford, Connecticut • 06492

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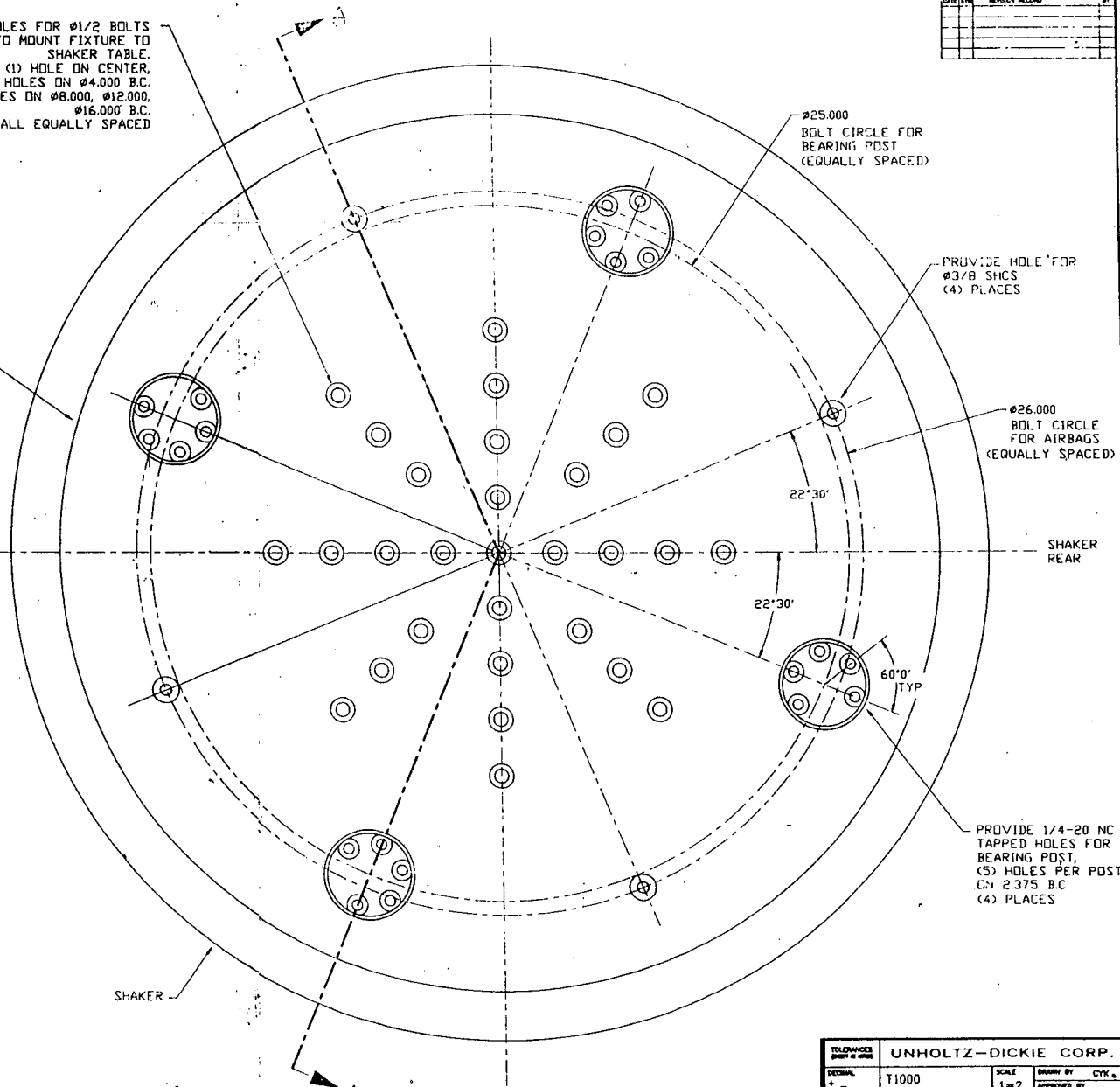
Printed in U.S.A.

Bulletin S1000 (W) IAR-88

Encl (2)



HOLES FOR 1/2 BOLTS TO MOUNT FIXTURE TO SHAKER TABLE.
 (1) HOLE ON CENTER,
 (4) HOLES ON Ø4.000 B.C.
 (8) HOLES ON Ø8.000, Ø12.000, Ø16.000 B.C.
 ALL EQUALLY SPACED



SECT A-A

TOLERANCES UNLESS OTHERWISE SPECIFIED			
DECIMAL	T1000	SCALE	1=2
FRACTIONAL		DRAWN BY	CYK
ANGULAR		APPROVED BY	
TITLE T.E. BEARING/AIRBAG LOCATIONS			
DATE	7-20-93	DRAWING NUMBER	D25844

